

CBU: 040-0-001

HKTA / architects, inc.

482 Congress Street – Suite 200

Portland, Maine 04101

HKTA / architects

phone: 207 . 774 . 6016

fax: 207 . 774 . 9128

e-mail: hkta@aol.com

10/8/08

J.B. Brown & Sons
Trish Weimer
482 Congress Street
Portland, Maine 04112

About: 20/36 Danforth Street, Portland – Interior Renovations

Dear Trish,

In response to the requirement to provide a one-hour ceiling assembly in the Lobby at York street level, the following applies.

1. **IBC: Section 602.1 Construction Classification**, defines this building as Type IIIB. Table 601 gives a fire resistance rating for floor construction to be 0 hours. This building should not be assumed to be Heavy Timber, because the floor construction does not meet the criteria that it is at least 3" thick as defined in Figure 602.4.4 (2).
2. **IBC: Section 720 Prescriptive Fire Resistance**, contains many prescriptive details for fire rated construction. Table 720.1 (3) deals with floor systems. In the table, Item 13 for wood Joist spaced 16" on center, 13.1.4 provides for a 1 hour ceiling construction by using ½" Type X gypsum wallboard.
3. **IBC: Section 721 Calculated Fire Resistance**, contains procedures by which the fire resistance of specific materials or combination of materials is established. Specifically 721.6 contain procedures by which the fire resistance ratings of wood assemblies are established. The ratings are equal to the sum of the time assigned to the membranes. Referring to 720.6.2 (1), 5/8" type x wallboard is assigned the time of 40 minutes, 721.6.2(2) wood joist (nominal 2") are assigned 10 minutes. In addition, the flooring consists of two layers or ¾" random width planks and the joist space is filled with insulation. These elements add time to the assembly. For example, Table 721.6.2(5) assigns an additional 15 minutes for the use of glass batts in wall assemblies.
4. **IBC: Section 717.3.3 Exception**: "Draftstopping is not required in buildings equipped throughout with an automatic sprinkler system"

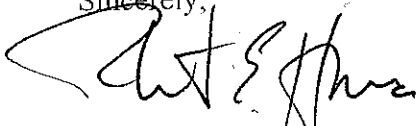
5. **IBC: Section 717.2 Fireblocking:** "In combustible construction, fireblocking shall be installed to cut off concealed draft openings and shall form an effective barrier between floors,". 717.2.1 Fireblocking materials, among other materials it includes, "blankets of mineral wool or glass fiber".

6. **IBC: Section 1016 Corridors,** "Corridors shall be fire resistance rated in accordance with Table 1016.1. Table 1016.1, for business occupancies in a building with a sprinkler system, the required fire resistance rating is 0 hours.

In conclusion, there is no need for a rating of the ceiling. However, in combustible construction, fireblocking is necessary when the space is concealed. This is accomplished with the use of fiberglass insulation as required by Section 717.2 above. If preference is shown for some rating, based upon item #2 and 3, a one-hour rating is achievable in the existing construction assembly.

If you have any questions, please do not hesitate to call. Thank you.

Sincerely,



Robert E. Howe, AIA

